

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
7 July 2005 (07.07.2005)

PCT

(10) International Publication Number
WO 2005/060722 A2

- (51) International Patent Classification: Not classified
- (21) International Application Number: PCT/US2004/044095
- (22) International Filing Date: 20 December 2004 (20.12.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 60/531,482 18 December 2003 (18.12.2003) US
- (71) Applicant (for all designated States except US): **PRESIDENT AND FELLOWS OF HARVARD COLLEGE** [US/US]; 1350 Massachusetts Avenue, Suite 727, Cambridge, MA 02138 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **GLIMCHER, Laurie, H.** [US/US]; 51 Hampshire Street, West Newton, MA 02165 (US). **MOWEN, Kerri** [US/US]; 121 Park Drive - #40, Boston, MA 02215 (US).
- (74) Agents: **DECONTI, Giulio, A.** et al.; Lahive & Cockfield, LLP, 28 State Street, Boston, MA 02109 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2005/060722 A2

(54) Title: MODULATION OF IMMUNE SYSTEM FUNCTION BY MODULATION OF POLYPEPTIDE ARGININE METHYLTRANSFERASES

(57) Abstract: The instant invention pertains to, e.g., method of identifying a compound that modulates cytokine production or T cell receptor-mediated signaling, by identifying modulators of the expression and/or activity of PRMT polypeptides. The invention further pertains to methods for identifying a compound that modulates cytokine production in a non-T cell, by identifying compounds that modulate the expression and/or activity of NIP45. Methods for modulating cytokine production in cells by modulating the expression and/or activity of at least one molecule selected from the group consisting of: NIP45, PRMT1, and NFAT are also provided. The invention also pertains to methods for modulating the relative number of Th1 or Th2 cells is modulated and to methods of treating a subject that would benefit from the modulation of cytokine production comprising contacting an immune cell from the subject with an agent that modulates PRMT 1 expression and/or activity in the immune cell.